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"*Renfrewia parvula*, a new Kelp from Vancouver Island," by Robert F. Griggs, is the title of the fifth paper. The proposed new genus *Renfrewia* is distinguished from *Laminaria* by its simple discoid holdfast without hapteres, from *Cymathere* in its unfolded lamina, and from *Phyllaria* in the absence of cryptostomata. The type-species, *Renfrewia parvula*, is considered to be one of the most primitive of kelps. Two previously described species, *Laminaria solidungula* J. Ag. and *Laminaria yezzoensis* Miyabé, are referred to the new genus.

"A Study of Tide-pools on the West Coast of Vancouver Island," by Isabel Henkel, the sixth essay, is written chiefly from the standpoint of dynamic geology, with some reference to the plant and animal life of the different types of pools and the conditions affecting the existence of life in such places.

The volume closes with a paper by Professor C. W. Hall on "Some Geological Features of the Minnesota Seaside Station," in which the geological formations of Port Renfrew and vicinity are described. The prevailing rock in the neighborhood of the Station is a hard dark shale, but mountains of granite occur west of Port Renfrew Bay. There are evidences of local glaciation but scarcely any that the region, as a whole, has been covered by a general ice-sheet.

The present volume of *Postelsia*, like its predecessor, is printed on wide-margined, enameled paper, and is illustrated by numerous half-tones from good photographs. It will not only form a pleasant souvenir to those who know the Vancouver coast and the Minnesota Seaside Station, but is also a dignified contribution to American botanical literature. . MARSHALL A. HOWE.

## PROCEEDINGS OF THE CLUB

OCTOBER 9, 1906

The first regular fall meeting of the club was announced to be held at the American Museum of Natural History, at 8:15 p. m. The day and evening were stormy, and only four members were present. The meeting was not called to order.

C. STUART GAGER,  
Secretary.

OCTOBER 31, 1906

The second stated fall meeting of the club was held at the museum building of the New York Botanical Garden at 3:30 p. m. In the absence of the President, Professor H. M. Richards presided. Twenty-three persons were in attendance.

The reading and adoption of the minutes of the meeting for May 23 and for October 9, 1906 was followed by the nomination of the following persons for membership: Mr. Charles M. Bergstresser, 58 West 47th St., New York City; Miss Edith B. Brainerd, 55 Van Buren St., Brooklyn, N. Y.; Douglas Houghton Campbell, Stanford University, Calif.; Mrs. H. A. De Costa, 58 Diamond St., Little Falls, N. Y.; F. W. Foxworthy, Bureau of Science, Manila, P. I.; Dr. Joseph V. Haberer, 11 Jewett Place, Utica, N. Y.; Mrs. Erick E. Lehsten, Grand Ave., Grantwood, N. J.; Mr. Bayard Long, Ashbourne, Pa.; Miss Annie Lorenz, 96 Garden St., Hartford, Conn.; Miss Rosalie Schumacher, Millington, N. J.; Mrs. Reuben H. Underhill, 19 S. Elliot Place, Brooklyn, N. Y.; Professor Ivan E. Wallin, Kenilworth, N. J.

The resignation of Miss Anna M. Clark was read and accepted.

Dr. Britton presented the matter of the Club's action in connection with the meeting of the A. A. A. S., to be held in New York City, December 27-31. The program of meetings for the Association week was read, and motion was made that a committee of five, including the chairman of the meeting, be appointed by the Chair, with power, to arrange for a reception to visiting botanists in Schermerhorn Hall, Columbia University, on the evening of December 26th. The motion was carried. The personnel of the committee is as follows: Professor H. M. Richards, Professor L. M. Underwood, Dr. H. H. Rusby, Mrs. E. G. Britton, Dr. C. Stuart Gager.

Dr. Britton presented the following amendment to the constitution of the Club:

"To amend Article XIV. of the constitution relating to annual dues, so that it shall read as follows:

"Each active member, upon his election, and annually at the beginning of each fiscal year thereafter, shall pay to the treasurer

the sum of five dollars. The payment of these annual dues shall entitle each active member to receive all publications of the club issued during the year."

The following papers were presented:

"Remarks on the Formation of aërial Tubers in *Solanum tuberosum*," by Dr. C. Stuart Gager.

A brief outline was first given of the steps in the germination of the potato seed, up to and including the growth of the primary rhizomes, and the formation at their distal ends of the first tubers. Reference was then made to two recent publications in *TORREYA* (6: 181, 211. 1906), describing an anomalous formation of a tuber of *Solanum tuberosum*, on a sprout from a seed tuber, in daylight, and briefly summarizing the pertinent literature.

The specimen in question, with photograph, was then exhibited, and possible causes of the anomaly discussed. Prunet's researches (*Rev. Gén. de Bot.* 5: 49. 1893) led him to the conclusion that, at maturity, the apical and basal ends of the mature tuber are physiologically different, due to a redistribution, after the cessation of growth, of the reserve materials stored in the tuber while it was forming. The validity of this conclusion has never been tested by other investigators, and it was thought improbable that such a condition, even if it existed in the seed tuber which bore the anomaly, would enter as a causative factor.

The specimen exhibited, and numerous other recorded cases of the formation of tubers on aërial branches, render very improbable the suggestion of Noël Bernard (*Rev. Gén. de Bot.* 14: 139, 269. 1902), and of Jumelle (*Rev. Gén. de Bot.* 17: 49. 1905), that potato tubers are caused by a fungus, a species of *Fusarium*, endotrophic with *S. tuberosum*.

In the normal formation of tubers two kinds of factors are doubtless involved: the first organic, consisting of specific peculiarities in the protoplasts; the second environmental, comprising external conditions, especially of light and moisture, and the stimulus of the various metabolic products within the stem. The ability to induce tuberization in aërial stems by depriving them of light and reducing their transpiration, as Vöchting did, and the sport described by Vilmorin (see *TORREYA*, *l. c.*), suggest

that the specific cellular peculiarities obtain throughout the entire shoot system, and need only the stimulus of definite environmental conditions, either external or internal, to make them operative.

In this connection it would be desirable to know whether the presence, in any portion of the potato stem, of a superabundance of food materials would operate as a stimulus, causing the excessive formation of parenchymatous xylem cells, which, gorged with the reserve food, make up the greater part of the bulk of the tubers. It is well known, through the researches of Knight and others, that, if the flow of food materials is diverted from incipient underground tubers by removing them as fast as they begin to form, this material will accumulate in portions of the aerial stem, causing tubers there. In the specimen in question, translocation of digested food became established toward and into the developing "sprouts," but elongation of the latter was not favored because of the very slight water supply from without. It does not seem improbable that a combination of these two conditions alone would be sufficient to produce the tuber, even in daylight.

"Two new coralline Algae from Culebra, Porto Rico," by Dr. Marshall A. Howe.

Dr. Howe exhibited and discussed briefly specimens representing two rather large and conspicuous kinds of non-articulated corallines which were secured during a visit made last March to the island of Culebra. These have been studied in collaboration with Dr. M. Foslie, of Trondhjem, Norway, and a joint paper, in which the two new species are to be described and illustrated, is soon to be published. One of the species is a *Goniolithon* which seems to have its closest affinity among the forms already described in a species originally found on the island of Funafuti, of the Ellice Islands group, in the South Pacific. The second species, a *Lithophyllum* which forms columnar flat-topped masses sometimes a foot in height, is evidently a reef-builder at Culebra, and like the other, curiously enough, finds its nearest relative in a species originally described from Funafuti and since reported from the Maldives in the Indian Ocean. The speaker remarked

upon some of the general characteristics of the non-articulated corallines, and showed microtome sections and photomicrographs illustrating the structure of the two species that were under discussion. In reply to a question as to the ecological relationships of the coralline algae and the true corals, it was stated that though certain species of both groups are reef-builders and inhabit similar places, each of the groups seems to be somewhat inimical to the other. A place in which corals are flourishing is not a good place in which to look for coralline algae, and *vice versa*. It is a common thing to find corallines attached to dead or moribund corals, but comparatively rare to find the corals growing on calcareous algae. In one case a crustaceous coralline was noticed to be encroaching upon and covering a living coral.

"Remarks on the Flora of Nova Scotia," by Dr. C. B. Robinson.

The province of Nova Scotia consists of a peninsula connected with New Brunswick by an isthmus of very slight elevation, and the island of Cape Breton separated from the rest of the province by the Strait of Canso, which at the narrowest place is less than a mile broad. The northern part of the island is composed of hills between 800 and 1,400 feet high, except narrow strips along the coast and in the river valleys.

In general, the flora of the peninsula and island is composed of plants which have migrated from the west or southwest through New Brunswick, many species having their northeastern limit in the province. A second source lies in the introduction chiefly from Europe, of weeds in ballast, etc., and many species thus added to the flora are very conspicuous and troublesome. But the main purpose of the paper was to call attention to the presence in northern Cape Breton of a third element, namely, species that are believed not to occur anywhere upon the peninsular portion of the province, and in some cases not in New Brunswick. Such cases are always open to the suspicion of incomplete collection, but this can hardly be held to explain the gap in the distribution of the male fern, *Dryopteris Filix-mas* (L.) Schott, known from about twenty localities in this region, although nowhere abundant there, and not found otherwise east

of Vermont. Another conspicuous fern reported from two rather widely separated districts in northern Cape Breton is the holly fern, *Polystichum Lonchitis* (L.) Roth, and no other stations are recorded east of Ontario. A similar statement may be made about many flowering plants, those referred to being *Carex abacta* Bailey, *Blephariglottis Blephariglottis* (Willd.) Rydb., *Sanguisorba canadensis* L., *Aster nemoralis* Ait., not known from peninsular Nova Scotia, *Drosera intermedia* Hayne and *Solidago macrophylla* Pursh, only so far found there immediately east of the Strait of Canso.

It was attempted to correlate this with the observations of Canadian geologists to the effect that the region in question had escaped glaciation, the limit of the ice-sheet being not far from Pictou.

Specimens were shown also of several species not hitherto recorded from the province, among them *Tetragonanthus deflexus* (J. E. Smith) Kuntze, *Sparganium fluctuans* (Morong) Robinson, *Meibomia canadensis* (L.) Kuntze, *Vicia hirsuta* (L.) Koch, *Falcata comosa* (L.) Kuntze, *Chaenorrhinum minus* (L.) Lange, and *Triglochin palustris* L.

"Account of a Collecting Trip to the Sierra Maestra of Cuba," by Mr. Norman Taylor.

Before giving an account of the various trips made during the expedition, a description was given of the area visited. This was a tract about forty miles long, having for its southern limit the Caribbean Sea. Its northern boundary is the ridge of the Sierra Maestra range. At its eastern and lower end this range is about 3,500 feet high, but rises in altitude, and gradually approaches the coast as it goes to the westward, reaching its culminating point near El Turquino, a mountain credited with an elevation of 8,400 feet. There is no gradual descent from the ridge of the Maestra to the sea, but numerous other mountains intervene. This feature, together with the river valleys, makes the country very rugged and precipitous.

The chief rivers, the Sevilla, Guama, Bayamita and Paladeros, rise in the Maestra itself, while numerous others of uncertain local names rise in the front ranges. All the rivers, at this time

of the year, flow under the ground for the last two miles, so that it is easily possible to get across near the coast, but in the rainy season they flow in the surface bed and are quite impassable.

The prevailing wind is the moisture-laden northeast trade. On this account the rainfall is abundant on the windward side of the Maestra while the leeward side of the range is dry and arid. The increasing altitude of the mountains from east to west and the decrease in the width of the strip of land lying between them and the sea makes the effect of this great wind-shield still more marked as one travels westward. Here at least two species of *Cereus*, and an *Agave*, together with many other more or less xerophytic plants, were found.

Among the interesting plants collected were specimens of *Pinus occidentalis*. This pine occurred on the mountains at elevations between 1,000 and 2,300 feet, and was plentiful in many places. The great size and inaccessibility of the trees of *Ceiba pentandra* that were found in the mountains were cited as facts that must have some bearing on the probable New World origin of the species.

Discussion followed by Dr. Britton and Dr. Howe, the former giving recent evidence collected by him in Jamaica, pointing toward the conclusion that the *Ceiba* may very probably be considered as a native of the New World.

The meeting adjourned at 5:20 o'clock.

C. STUART GAGER,  
Secretary.

## NEWS ITEMS

*Science* for November 16 announces the appointment of Dr. Albert Mann, formerly professor of botany in the Ohio Wesleyan University and expert in the U. S. Department of Agriculture, as professor of botany in the George Washington University.

The herbarium of William Mitten, the distinguished bryologist, who died at Hurstpierpont, England, last July, has been purchased by the New York Botanical Garden. Mr. R. S. Williams, of the Garden staff, sailed for England on October 6 to superin-